

U.S. Patent Application Serial No. **10/524,417**

Response filed July 2, 2009

Reply to OA dated March 4, 2009

REMARKS

Claims 1-6 and 8 are pending in this application. Claims 1, 2, 4 and 5 are amended herein. Upon entry of this amendment, claims 1-6 and 8 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments to the claims is as follows:

Claims 1-6 and 8 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office action paragraph no. 5)

The rejection is overcome by the amendments to the claims. The word "type" has been deleted in the claims to amend the phrase "heat ray reflection type substrate" to --heat ray reflection substrate--.

Claims 1-6 and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over the U.S. Patent of Lin (5,275,869) in view of the U.S. Patent Application Publication of Inoue et al. (2002/0033117; hereinafter "Inoue"). (Office action paragraph no. 7)

The rejection is overcome by the amendments to the claims. Specifically, claim 1 has been amended in lines 1-3, as follows: "a heat ray reflection substrate having solar radiation reflectance of 55.3% or less and visible light reflectance of 10% or more to 53.4% or less."

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Support for the upper limit value of solar radiation reflectance of 55.3%, and the upper limit value of visible light reflectance of 53.4%, may be found in the Examples in the present specification. Specifically, the specification discloses at page 23, line 20, and Table 1, a solar radiation reflectance of 55.3% for an Al vacuum-deposited semitransparent film. The specification discloses at page 23, line 11, and Table 1, a value of 53.4% for the visible light reflectance of an Al vacuum-deposited semitransparent PET.

In addition, claim 1 has been amended to delete "carbon black" as one of the Markush group of components of the visible light absorbing ink, in the last clause of claim 1.

Regarding Lin '869.

(1) The Lin patent states at column 1, line 67, to column 2, line 4, that: "It is one object of the present invention to provide a heat ray reflecting glass which has a high monodirectional reflection, high heat insulation and high luminosity with a reflecting rate and a transparency rate as high as 84% and 65%, respectively, and which can be optionally adjusted depending upon various uses." As is clear from this description, the Lin patent intends to obtain a heat ray reflecting glass having as high a reflection as 84% and as high a transparency as 65%.

(2) In order to achieve this object, the heat ray reflecting glass of the Lin patent is comprised, as shown in Fig. 6, of a glass plate substrate 1, a metal or metallic oxide layer 2 formed on the glass plate substrate 1 **with crevice portions 3' interposed therebetween**, and a printing ink layer 21 formed on the metal or metallic oxide layer 2.

And when the heat ray reflecting glass of the Lin patent is subjected to light, a large part of

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the light is reflected by the action of the metal or metallic oxide layer 2 and the printing ink layer 21 formed thereon. Thus, this heat ray reflecting glass appears to have a high reflection of about 84%, as well as a high transmittance of about 65% since part of the light passing through the above crevice portions 3' is transmitted in this heat ray reflecting glass.

That is, the heat ray reflecting glass of the Lin patent adopts an approach to the provision of "the metal or metallic oxide layer 2" through the above crevice portions 3' so as to obtain a high reflection and a high transparency, i.e., 84% and 65%, respectively, (when the heat ray reflecting glass is so constructed as to have a high reflection, its transmittance is necessarily lower. Thus, it appears that a high transmittance could be obtained by forming the above crevice portions 3').

(3) On the other hand, the laminate of the present invention, which **"consists essentially of a heat ray reflection substrate ... and a visible light absorbing film,"** does not have crevice portions as in the Lin patent, and can obtain a desired transmittance without the need for formation of such crevice portions 3', which are required in the Lin patent. With regard to the Al vacuum-deposited semitransparent PET film according to the present invention (the specific embodiment of the above heat ray reflection substrate described in the Examples), an approach is adopted such that, as described in Table 1 and at page 23, lines 11 and 20 of the specification, the visible light reflectance of this substrate is controlled to be low at about 53.4% (incident radiation on the surface of the glass surface in the Comparative Example), and the solar radiation reflectance of this substrate is controlled to be low at about 55.3% (incident radiation on the surface of the film in the Comparative Example). In this way, a visible light transmittance of about 19.2% (incident radiation on the surface of the film in the Comparative Example) and a solar radiation transmittance of about

15.5% (incident radiation on the surface of the film in the Comparative Example) are obtained which are required in the laminate.

(4) That is, the laminate of the present invention adopts such an approach that a desired transmittance can be obtained in this laminate without adoption of the approach in which the above crevice portions 3' are required in the heat ray reflecting glass of the Lin patent. Additionally, when compared to the Lin patent in which the reflection and transparency of the heat ray reflecting glass are required at high values, i.e., about 84% and about 65%, respectively, the laminate of the present invention uses a heat ray reflection substrate having solar radiation reflectance of 55.3% or less and visible light reflectance of 10% or more to 53.4% or less (namely, the heat ray reflection substrate having a lower reflectance than that of 84% in the Lin patent). And, as mentioned above, the transmittance of the laminate is set to have a visible light transmittance of about 19.2% and a solar radiation transmittance of about 15.5% (namely, the transmittance being lower than that of 65% in the Lin patent).

Therefore, the heat ray reflecting glass of the Lin patent and the laminate of the present invention are different from each other in view of the optical properties required, and due to this difference, the ways of obtaining the respective desirable transmittances are also different from each other.

Regarding Inoue '117

(1) The Inoue et al. publication states at paragraph [0002] that: "The present invention relates to a polychromic ink composition depending on viewing angle which can be suitably used for writing

instruments, stamps, paints, cosmetics, or the like." Inoue also states at paragraph [0009] that: "The object of the present invention is to provide a polychromic ink composition depending on viewing angle which can obtain written marks or coating films having polychroism depending on viewing angle which have not been realized by using the conventional metallic pigments or pearlescent pigments." As is clear from these descriptions, Inoue is concerned with a polychromic ink composition depending on viewing angle which is useful for stationery products such as writing instruments, stamps, paints, cosmetics and the like.

(2) Therefore, the heat ray reflection substrate according of the present invention which is used for the purpose of shielding the sunlight that enters through window materials of constructions, window materials of automobiles, and so forth (see page 2, lines 2-7 of the specification), the heat ray reflecting glass according to the Lin patent, and the polychromic ink composition depending on viewing angle which is useful for the above stationery products according to Inoue are in different technical fields. And there is no common constituent present between the polychromic ink composition depending on viewing angle of Inoue et al. and the printing ink of the Lin patent.

Therefore, there is no suggestion or motivation for combining the Lin patent, relating to a heat ray reflecting glass, with the Inoue, relating to stationery products.

(3) In addition, claim 1 has been amended to delete "carbon black" as a possible constituent of the "visible light absorbing ink." There is no disclosure in Inoue for "the visible light absorbing ink" as recited in claim 1, which "contains fine particles that absorb visible-region light and transmits near-infrared-region light and infrared-region light, i.e., at least one fine particles of a compound oxide selected from the group consisting of Cu-Fe-Mn, Cu-Cr, Cu-Cr-Mn, Cu-Cr-Mn-Ni, Cu-Cr-Fe

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and Co-Cr-Fe, titanium black, titanium nitride, titanium oxynitride, a dark-colored azo pigment, a perylene black pigment, and an aniline black pigment." Thus, even Lin '869, relating to a heat ray reflecting glass, is combined with Inoue '117, relating to stationery products, the laminate of the present invention, which is provided with the above-mentioned "heat ray reflection substrate" and "visible light absorbing film," cannot be constructed.

Summary

(1) As discussed above, the heat ray reflecting glass of the Lin patent and the laminate of the present invention are different from each other in view of the optical properties required. And due to this difference, approaches to obtaining the respective desirable transmittances are also different. Thus, the heat ray reflecting glass of the Lin patent and the laminate of the present invention are different structures.

(2) Further, Lin, relating to a heat ray reflecting glass, and Inoue, relating to stationery products, are in different technical fields. Common constituents are not present between the polychromic ink composition depending on viewing angle of Inoue and the printing ink of Lin. Thus, there is no suggestion or motivation for combining Lin with Inoue.

(3) Moreover, there is no disclosure in Inoue for "the visible light absorbing ink" as recited in claim 1. Even if Lin, relating to a heat ray reflecting glass, is combined with Inoue, relating to stationery products, the laminate of claim 1, which is provided with "a heat ray reflection substrate" and "a visible light absorbing film," cannot be constructed.

(4) Therefore, claim 1 and dependent claims 2-6 and 8 are not obvious over Lin and Inoue, taken separately or in combination.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time

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